



## **Office of the City Auditor**

# **Audit of Plumbing and Landscape Conversion Rebates Report No. 0517**

December 19, 2005

The City is in compliance with rebate programs set out in the Non-Per-Capita Agreement filed with the Arizona Department of Water Resources. Our work, however, found that there are no valid performance measures that can be used to gauge the effectiveness of offering incentives in lieu of other conservation actions such as expanding the number of water audits conducted or increasing educational opportunities. The Water Conservation Program would benefit from the implementation of a planning and performance system that would accurately track outcomes, measure actual performance, and provide management with reputable information needed to ensure the most efficient use of funds.

### **CITY COUNCIL**

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Mary Manross

Council  
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December 19, 2005

To the Most Honorable Mary Manross, Mayor  
and Members of the Scottsdale City Council

Transmitted herewith is a report on the Plumbing and Landscape Conversion Rebates, Report No. 0517. We would like to thank the Water Resources Department and Utility Billing staff for their cooperation and assistance during our audit.

If you need additional information or have any questions, please contact me at 480-312-7756.

Respectfully submitted,

Cheryl Barcala, CPA, CIA, CFE, CGFM, CISA, CISSP  
City Auditor

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## **EXECUTIVE SUMMARY**

This audit report discusses the results of work completed by our Office to 1) verify compliance with water conservation rebate programs submitted by the City to Arizona Department of Water Resources (ADWR) as agreed upon steps the City will take to encourage water conservation, 2) evaluate Water Resource management efforts to gauge the effectiveness of the rebate programs, and 3) evaluate controls in place to ensure that funds budgeted for the rebate programs are used as intended.

Our work, and discussions with staff at ADWR, supports a conclusion that the Water Resources Department is in compliance with agreed upon implementation tasks related to rebate programs as outlined in the Non-Per-Capita Agreement. We also confirmed that Water Resources departmental staff has submitted all required information to ADWR.

As part of our work, we compared the rebate programs codified in City Code to those submitted and approved by ADWR and found that the City has implemented rebate programs over and beyond what is required by ADWR and those that are offered by surrounding communities. For these programs, Water Resources departmental management has not implemented an effective planning and monitoring system to provide useful, timely, and relevant data that can be used to evaluate rebates currently offered, vet new proposals in an effort to weigh the potential to achieve the goal of the conservation program, or gauge the effectiveness of marketing campaigns. As a result, there is no information available to allow a conclusion that offering larger rebates increases participation or ultimately achieves a measurable reduction in water consumption.

Finally, we found that internal controls are not sufficient to ensure that funds budgeted for the conservation rebate programs will be used for the purpose intended. We could not reconcile the value of credits given on the Utility Billing System to the supporting documentation maintained by Water Resources staff to verify that the value of credits posted against revenue due the City is equal to the value of rebates authorized.

To improve the potential for the Water Conservation Program to achieve measurable results, we recommend development of specific goals and annual performance measures that can be used to gauge the effectiveness of the various rebates offered by the City. The Action Plan with management's proposed plan of action is on the following page. Management's full response is located in Appendix A.

## ACTION PLAN

No.	Recommendations and Management Response
1	<p>The Water Resources Department should develop its own planning and performance system for the rebate program and the overall water conservation effort that will benefit the City now and in the future.</p>
	<p><b>Management Response:</b> Concur. The Water Resources Department will initiate the development of an enhanced planning and performance measurement system for the overall water conservation program including the rebate program and development of a marketing strategic plan.</p> <p><b>Responsible Party:</b> Beth Miller                      <b>Completed By:</b> 06/01/06</p>
2	<p>The Water Resources Department should re-evaluate the methods used to process rebate credits and track expenditures.</p>
	<p><b>Management Response:</b> Concur. The Water Resources Department will work jointly with Customer Service, Utility Billing, and Financial Services to re-evaluate and streamline the methods used to process rebate credits and track expenditures.</p> <p><b>Responsible Party:</b> Beth Miller                      <b>Completed By:</b> 02/28/06</p>
3	<p>Water Resources Department management should re-evaluate its goals, objectives, and outcomes to ensure that the funds designated for water conservation are used in the most efficient manner. Funds for these programs should only be used if there is a potential for a reduction in water usage and not for revitalization efforts more appropriately funded with general City revenues.</p>
	<p><b>Management Response:</b> Concur. The Water Resources Department will review its goals, objectives, and outcomes to ensure that funds designated for the water conservation program are used in the most efficient and effective manner.</p> <p><b>Responsible Party:</b> Beth Miller                      <b>Completed By:</b> 02/28/06</p>
4	<p>Water Resources staff should submit a modified provision to City Council for consideration or submit a revised RCM to ADWR for approval.</p>
	<p><b>Management Response:</b> Concur. The Water Conservation Program will discontinue the practice of issuing rebates to municipal facilities, and will submit a revised RCM to ADWR for approval.</p> <p><b>Responsible Party:</b> Beth Miller                      <b>Completed By:</b> 01/30/06</p>

## **BACKGROUND**

Water is one of Arizona's most important resources. In the 1980s and 1990s, sweeping legislative changes were implemented to recognize that effective management of water was a requirement to sustain Arizona through the years. In recognition of the state's dependency on this natural resource, the following policy declaration was inserted into the Arizona Revised Statutes (ARS).

*The legislature finds that the people of Arizona are dependent in whole or in part upon groundwater basins for their water supply and that in many basins and sub-basins withdrawal of groundwater is greatly in excess of the safe annual yield and that this is threatening to destroy the economy of certain areas of this state and is threatening to do substantial injury to the general economy and welfare of this state and its citizens. The legislature further finds that it is in the best interest of the general economy and welfare of this state and its citizens that the legislature evokes its police power to prescribe which uses of groundwater are most beneficial and economically effective.*

*It is further declared to be the public policy of this state that in the interest of protecting and stabilizing the general economy and welfare of this state and its citizens it is necessary to conserve, protect and allocate the use of groundwater resources of the state and to provide a framework for the comprehensive management and regulation of the withdrawal, transportation, use, conservation and conveyance of rights to use the groundwater in this state.*

Included within the new legislation was a requirement for active management of groundwater in areas designated as "active management areas" and a management goal of "safe-yield," by 2025, in the Tucson, Phoenix, and Prescott active management areas.

Statutorily, ADWR is charged with carrying out specific duties related to the conservation and use of groundwater, surface water, and the watersheds in the state. To achieve this goal, ADWR is statutorily mandated to develop a management plan for each active management area. Each management plan must include a mandatory conservation program for all parties withdrawing, distributing, or receiving groundwater. Requirements in statute were phased by setting out specific actions during 1980 to 1990 (known as the first management period) and other more aggressive steps in subsequent years.

### **Statutorily Mandated Conservation Programs**

Under ARS, conservation programs for the first management period were structured to achieve a reduction in the per capita water consumption in the designated active management area. Statutorily, cities had to demonstrate reasonable reductions in per capita use and implement other conservation measures as deemed appropriate.

Under the second management period (1990 to 2000), ADWR was required, by January 1995, to develop a non-per-capita conservation program with the following elements:

1. Conservation programs that addressed interior and exterior water use.
2. Public education programs about water conservation.
3. Metering of all service area connections except fire services, dwelling units in multifamily residential structures, mobile homes in parks with master meters, and construction users.

Similar provisions rolled over to the third management period (2000 to 2010). If a municipal provider met certain requirements, the provider could make an application to ADWR to be covered under the non-per-capita conservation program instead of the more onerous requirements under the per capita conservation program.

### **Conservation Programs at the City**

The City qualified and made application to ADWR for approval to operate under the non-per-capita conservation plan in 1991. A new Agreement was filed with the start of the third management plan and as such, the City is held responsible for the Non-Per-Capita Agreement filed with ADWR for the period 2000 through 2010.

Under this Agreement (see Appendix B for details), the City is required to comply with 13 recommended conservation measures (RCM) and the responsibility for complying rests with the Water Resources Department. The Water Conservation Office, a Division of the Water Resources Department, actually administers the Non-Per-Capita Conservation Program. Three of the RCMs submitted by the City require implementation of rebate programs.

These programs consist of the:

1. Low Flow Plumbing Rebate Program for existing residential customers.
2. Low Flow Plumbing Rebate for existing non-residential customers.
3. Rebate Program for Low Water Use Landscaping and Irrigation Systems Improvements for existing and new non-residential customers.

In addition to the rebates required as a condition of the Non-Per-Capita Agreement, the City also offers the:

1. Hot Water Recirculation System Rebate Program.
2. Rebate Program for Low Water Use Landscaping and Irrigation Improvements for existing and new residential customers.

Provisions in City Code require the following to be eligible for any of the rebates:

Applicants must own the property or be legally responsible for the water bill.

- The property must be connected to the City water system.
- Rebates will be paid in the form of a credit on the owner's water bill.
- The total dollar amount of rebates issued in any fiscal year cannot exceed the maximum amount budgeted for the rebates by Council.

The following sections briefly summarize the various rebates available.

***Low Flow Plumbing Rebate Program for Existing Residential Customers***

This rebate program is only available if the service account was established prior to January 1992. An owner of a single-family residence is eligible for two rebates of \$75 as an incentive to install low flow toilets (1.6 gallons per flush) and two rebates of \$5 per low flow showerhead (2.75 gallons per minute or less). If approved, the total value of the combined rebates will be credited to the water account.

After 1994,  
it was illegal  
to sell or  
install high  
flow  
plumbing  
devices in  
Arizona.

***Low Flow Plumbing Rebate for Existing Non-Residential Customers***

This rebate program is similar to what is available for residential customers but is extended to non-residential accounts established prior to January 1992. A non-residential customer may apply for either the \$75 toilet rebate or the \$5 showerhead rebate or both based on the number of fixtures replaced. The rebate will be processed as a credit against the water account.

***Rebate Program for Low Water Use Landscaping and Irrigation Systems Improvements for Existing and New Non-Residential Customers***

Under the Non-Per-Capita Agreement, the City agreed to offer a rebate up to \$500 per landscape meter for existing and new non-residential water customers that agreed to complete and install an approved landscape plan that effectively replaced at least 75 percent of the vegetative landscaping with approved low water use plants. In addition, the City would rebate \$50 if a new electronically controlled automatic irrigation control device were installed.



Effective August 2005, the City did away with the rebate program as submitted to ADWR and implemented a new rebate. Properties that have received rebate credit under a previous landscape rebate program or converted the landscaping prior to August 5, 2005, are not eligible for the new program.

Under current parameters, non-residential water customers may be eligible for a one-time rebate up to \$3,000 as an incentive to remove turf and replace it with low water use plants. The actual amount that will be approved is based on 25 percent of total costs (excluding taxes) to complete the approved plan. No more than 1,000 square feet of landscaped area will be considered eligible and the owner must submit a contractor's bid. Before approval, the City must approve the design and conduct a pre-inspection of the property; no work can begin prior to the preliminary inspection.

Non-residential water customers are also eligible for an enhanced irrigation controller rebate for the cost of installing a new multi-program, permanently hardwired, electronically activated irrigation controller. The rebate amount is limited to actual cost (excluding taxes) or \$250 per unit. Properties that have received a rebate credit in a previous controller rebate program are not eligible for this program and the new rebate is a one-time credit that will be applied to the water bill. A backflow device must be installed and inspected for nonresidential properties and multifamily residential properties.

### ***Hot Water Recirculation System Rebate***

This program was adopted effective September 2005 for single-family residential customers who install a hot water recirculation system in their home. The system covered by the rebate circulates water between the water heater and the hot water faucets to provide instant hot water when the faucet is turned on. Industry guidance indicates that installing a device such as this saves water as well as energy.

To qualify, the customer must purchase a new "listed" product (such as Underwriters Laboratories [UL] approved), which has either a programmable timer for a minimum of two cycles so that the device runs only when needed or a pump on/off switch provided at a minimum of one fixture. Tankless water heater systems would not qualify as currently written.

To obtain the rebate, the water customer must provide a copy of the building permit, proof of installation, and a sales receipt dated after January 2005. If approved, the City will process a \$200 credit to the customer's water account.

***Rebate Program for Low Water Use Landscaping and Irrigation Improvements for Existing and New Residential Customers***

Prior to July 2005, residential customers who installed or converted to new xeriscape landscaping after January 2002 were eligible for a \$500 rebate and a \$50 irrigation control rebate. The amount received for the conversion rebate was based on area converted multiplied by a factor that estimated water savings. If the lot was less than 9,000 square feet, the factor was 55 percent of the space multiplied by a factor based on water savings and then calculated at the current rate per 1,000 gallons.

As of July 2005, the rebate is based on cost of landscaping and not potential water savings. Customers must have at least 500 square feet of turf that can be removed to qualify and there are two options available:

- Option 1 offers assistance with turf removal only. Customers are rebated 25 cents per square foot of turf removed.
- Option 2 offers a combination of turf removal with the installation of low-water use plants. Customers receive an additional 25 cents per square foot towards the cost of low-water-use plants (from an approved list).

With either option, the maximum rebate is limited to \$1,500. To qualify, site inspections are required prior to the beginning and at the completion of the work. The final inspection concludes with a photograph of the property.

The landscape irrigation controller rebate also changed effective August 2005. Instead of \$50, residential water customers are eligible for a rebate of actual cost (not including taxes) or a maximum of \$250 towards the cost of installing a new multi-program, permanently hardwired, electronically activated irrigation controller. Properties that received a rebate credit under a previous program are not eligible for the new rebate as this is a one-time credit.

**Staffing for the City's Conservation Program**

At present, the Water Conservation Office is staffed with four full-time Water Conservation Specialists, one full-time contractor, and one part-time support staff. In addition, the Division has been fortunate to obtain the help of two volunteers. With their combined skills, the work area has certifications ranging from Arborist, Horticulturist, and Irrigation Specialist and also has staff with expertise in landscape design. The staff manages the rebate programs, presents classes on water conservation, and undertakes extensive public outreach on the benefits obtained from conserving water.

## **Financial Considerations**

In fiscal year 2004-2005, the Water Resources Department had a \$43 million budget. Of this, slightly more than \$536,000 (1.25 percent) was set aside for the Water Conservation Division and \$90,000 was specifically budgeted for rebate programs. Rebate-related expenditures charged against the funds during this fiscal year totaled \$88,700.

The Water Resources Department budget increased to \$46.3 million (up 7.13 percent) in fiscal year 2005-2006. The Water Conservation Division budget was increased to a little over \$930,000 (up 73.5 percent) in anticipation of the increased rebates that would be proposed to City Council for approval. Of the \$350,000 included in the budget for rebates, \$150,000 is set aside to fund the Landscape Assistance Program discussed in the next section.

## **Other Landscape Assistance Available to Scottsdale Residents**

In October 2005, City staff proposed a new Landscape Assistance Program (LAP) to City Council for approval. LAP, a part of the Scottsdale Revitalization Program, was created as a cooperative effort between the Water Resources Department and the Citizens and Neighborhood Resources (CNR) Department. The program purpose is to enhance the appearance of single-family residential front and/or front-side yard landscapes for low-income households in older neighborhoods. To qualify, the house must be a minimum of fifteen years old and owner occupied. There is a 5,000 square foot landscape area limit.

Code Enforcement personnel notify eligible homeowners that the program is available as an alternative to dealing with a code violation for the failure to maintain front yard landscaping to requirements set in City Code. If the homeowner chooses to pursue this avenue, an application is completed and filed with the CNR Department. Staff assigned to the CNR Department reviews the application and supporting documents to determine eligibility and coordinates contact between a Water Conservation staff and the approved applicant(s).

LAP is not a rebate program. It is a financial assistance package for low income qualifying homeowners that have not been able to adhere to City Code requirements. To qualify, applicants must be a minimum of sixty-two years old and/or disabled at the 50 percent income level or less. Income levels are based on federal HUD income guidelines for Arizona. If approved, a contractor, hired and paid by the City, will complete a landscape design, install material, ensure that the work is complete, and guarantee plant survival and weed control for one-year past renovation. Water Conservation staff oversee

the work completed by the contractor. There is no cost to the homeowner for this service but a lien is placed on the property and any landscape related code violations occurring within a three year period after the renovation is complete, voids the "no-cost" agreement and the homeowner is billed for the renovation work performed.

Funding to implement LAP is available under CNR capital projects neighborhood revitalization account #402-N0501 and Water Resources water conservation administration account #600-09025. Since one of the major purposes of LAP is to revitalize areas of southern Scottsdale, CNR monies will be expended first. Any older homes that are located outside of the revitalization area will be funded through the Water Resources Department water conservation fund. The performance target is 100 landscapes at approximately \$3,000 per landscape.

### **Programs In Other Arizona Cities**

Other cities in the metropolitan area are also required to carry out water conservation programs and the activities vary based on specific plans filed with ADWR. No rebate incentives are offered by Phoenix, Apache Junction, or the Town of Gilbert. Instead, water conservation efforts are centered around public forums, educational classes, publications, and internet websites. The cities of Tempe, Chandler, Mesa, and Glendale do offer rebate programs which are summarized below.

#### ***City of Tempe***

Similar to Scottsdale, Tempe started offering a landscape rebate program in 1991. Initially, the rebate consisted of a one-time rebate of \$100 to convert either a back or front yard. In September 2004, the Tempe City Council approved an increase in the rebate and the amount now available is \$250 for the front yard and \$250 for the back yard.

Tempe offers 50 percent (up to \$75) if a homeowner replaces a high-flow toilet with an ultra-low flush toilet and also offers a plumbing retrofit kit free of charge for homes built prior to 1980.<sup>1</sup> The kit includes:

- One ultra low flow showerhead (less than 3 gallons per minute) plus sealant tape.
- One toilet dam to partition off part of the toilet tank.
- One toilet tummy, a water displacement device.
- Two faucet aerators for the kitchen and bath.

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<sup>1</sup> City of Tempe adopted low flow plumbing device requirements in 1980, so homes built after this time are not eligible.

- Leak detection tablets.
- Instructions.

Tempe also recently started offering grants to industrial and commercial water customers as an incentive to install water saving technologies. The program targets three types of water use: a) Industrial/Commercial Processes, b) Landscape Changes or Retrofits, and c) Cooling Systems.

Representative projects from each area will be selected for funding based on the overall amount of water used at the facility and the exploration of water saving technologies. At a minimum, the facility will need to reduce its overall water use by 15 percent.

If approved, a project costing less than \$10,000 is eligible for a rebate from 25 percent to 50 percent of total project cost based on anticipated sustained reduction in water use. Projects that cost more than \$10,000 are eligible for the same percentage of funding but the rebate is capped at \$20,000.

### ***City of Chandler***

Chandler offers two rebates. The first is a landscaping rebate available to residents that have more than 1,000 square feet of landscapable area and convert at least 50 percent of the front and back yard into desert landscaping. After inspection by a Water Conservation Specialist, the resident will receive a rebate of \$200. The second rebate is for the installation of an automatic sprinkler/irrigation timer. To qualify, the resident must first obtain a permit and an inspection and then a \$72 rebate will be processed (\$50 for the controller and \$22 for the permit).

### ***City of Mesa***

In 1984, Mesa adopted the Water Development Fee Rebate Program for utility customers who install a low water use landscape. Provided that the landscaping meets set criteria, a refund (ranging from \$100 to \$200) of up to 25 percent of the amount of the water development fee will be authorized upon the receipt and subsequent verification of the information listed on the water development fee refund application.

### ***City of Glendale***

Glendale offers several different rebates for converting landscaping. If a homeowner converts at least 500 square feet of grass to low water use landscaping, a rebate of up to \$750 (based on area converted) is available. At least 75 percent of the plant material must be on the state's approved list of low-water plants.

For new homes, Glendale will rebate up to \$200 if at least 50 percent of the landscapable area (front and back yard) is non-grass. At least 1,000 square feet of landscape area must be available for landscaping and 75 percent of the plant material must be on the state's approved list.

Finally, Glendale offers homeowner associations, multifamily residential units and commercial properties a rebate of up to \$3,000 (effective July 1, 2005). To qualify, the organization or group applying for the rebate must participate in a water budgeting process offered by the City. If the process is complete, the City will rebate \$1,500; additional funds of up to \$1,500 will be paid based on \$150 per 1,000 square feet of converted turf to reach the maximum available.

## **OBJECTIVES, SCOPE, AND METHODOLOGY**

The objectives of this audit were to:

- Determine whether management has measurable and relevant goals and objectives (performance measures), whether outcome data is captured, and whether the activities performed are commensurate to the purpose of the program.
- Determine if the City has taken appropriate steps to help ensure proper indemnification related to the plumbing and landscape conversion rebate programs.
- Determine if the funds designated for the rebate programs are used appropriately.
- Determine program compliance with ADWR RCMs; City Code, Article VII, Section 49-241 through 49-264; and the recent rebate program expansions approved by City Council.

To accomplish our objectives, we studied City Administrative Regulations; Water Conservation City Code, Article VII, Section 49-241 through 49-264; ADWR Non-Per-Capita Conservation Program (NPCCP) Agreement; and minutes from City Council meetings and work-study sessions to gain an understanding of the overall operations, organizational structure, and requirements specific to each rebate program. We interviewed staff from the Water Resources Department, Water Conservation Division, Purchasing Division, Financial Services Department, and Communications and Public Affairs (CAPA) to identify their respective roles in the rebate programs. In addition, we contacted ADWR for insight into the overall water conservation effort and CNR Department staff regarding the criteria established for a newly implemented City Neighborhood Revitalization/LAP.

The audit work performed entailed an evaluation of management performance measures and tests of financial report information. The audit scope included all program activity performed from July 1, 2002 (FY 02/03), through October 20, 2005 (FY 05/06). We reviewed FY 02/03 and FY 03/04 ADWR annual reports, program cost calculations, water savings formulas, rebate pamphlets, and landscape publications. Water Resources Department management was interviewed with regards to the current program goals, expectations, and outcomes. Current contract files were reviewed to validate that the outside contractor associated with the rebate programs has adequate liability insurance coverage to indemnify the City with any issues related to the rebate programs and the citizens served.

A sample of the hot water recirculation, irrigation controller, landscape, and plumbing rebate recipients were randomly selected to test the existence of controls over funds and program compliance with the stated guidelines. Rebate applications were reviewed for customer eligibility, the required support documentation applicable to the rebate program, and the amount rebated. Rebate credits were traced to the customer account through the Financial Services automated Utility Billing System. Each account was reviewed to verify the accuracy of the rebate amount and to ensure that credits were applied to the correct customer accounts.

We compared rebate budgets reported by the program to the balances shown on the Financial Services Budget Balances by Department/Division/Center report. Monthly and fiscal year-end General Ledger, Detailed Trial Balance, and Monthly Expenditure report totals were compared to the applicable program expenditures summarized for FY 04/05 through October 2005. Rebate recipients summarized in the monthly Excel spreadsheets maintained by the program were traced to the Trial Balance detail. In addition, field visits were conducted for four landscape accounts to verify that the work was performed and the rebate provisions were met.

Audit work was conducted in accordance with generally accepted government auditing standards as they relate to expanded scope auditing in a local government environment and as required by Article III, Scottsdale Revised Code, Section 2-117, *et seq.* Survey work took place in September and audit testing was completed in October 2005, with Monica Thomas and Mike Worth performing the work.



**OBJECTIVE 1: Determine whether management has measurable and relevant goals and objectives (performance measures), whether outcome data is captured, and whether the activities performed are commensurate to the purpose of the program.**

<p><b>Finding:</b> ADWR objectives, outcome data, and activities are adequate to satisfy mandates, however, opportunities for improvement exist.</p>
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Criteria: Performance measurement is an essential component of management control to ensure that budget decisions focus on results and outcomes. Procedures should ensure that program performance is evaluated at least annually or more often should there be significant changes in the mission or goals of the program. Outcomes should be monitored and used in managerial decision-making processes.

Effective management controls should be in place to ensure that appropriate goals and objectives are met; resources are safeguarded and used efficiently, economically, and effectively; and reliable data is captured, maintained, and fairly disclosed.

The Non-Per-Capita Agreement states that the City will file an annual report for the preceding calendar year with: (a) an assessment of program effectiveness, (b) the number and type of rebates, and (c) the methods used to notify customers. The City shall provide any other reasonable information required in writing by the ADWR Director to evaluate the effectiveness of the implementation.

Condition: As part of our work, we attempted to verify that the Water Conservation Program, as it relates to the rebates offered, was operating in a manner to provide reasonable assurance that goals and objectives were achieved. Our interview responses received from department management, review of the performance documentation, and analysis of program outcomes are the basis for this evaluation.

The rebate programs met ADWR performance requirements, even exceeding expectations in some areas. However, the overall effort is not proactive enough to prepare for future population growth or other possible future water supply issues. Our work indicated that:

- Rebate programs have continued to be funded and expanded without determining if they are actually effective in reducing water usage.
- Program expansion required additional staff, including an outside landscape contractor, but has not increased citizen volunteer participation.
- There is no marketing plan.

- Formulas used to project water savings are based on assumptions using industry standards that are not specific to the City. Water Resources staff does not track individual usage for recipients receiving rebates to see if there is an actual decrease in water consumption.
- Performance outcomes cannot be reconciled to the expenditure reports available on the financial management system.

We also made inquiries of other organizations to look for examples of performance expectations. The Water Resources Research Center, located at the University of Arizona, performed a study on low-consumption toilets by contacting rebate program participants. The results identified problems with certain types of toilets replaced by owners and rebated by the City. As a result, the Research Center recommended that rebate programs exclude toilets that are designed to lessen water consumption but actually do not perform well from the list of qualifying devices. The City's program has not been customized to address the issue of well-performing devices while excluding those that fail to meet expectations.

Cause: Management's focus on ADWR compliance. Water Resources management states that its, "foremost goal has been and continues to be, to comply with the ADWR requirements." Staff from ADWR stated that the agency has been fighting a difficult lawsuit that required a united effort of all available staff. Because of this, they have not reviewed the annual reports sent to them by the City or other municipalities under contract. They could not comment on the effectiveness of the program at this point.

Effect: Simplistic goals that provide misleading information about water usage and program performance.

Recommendation: The Water Resources Department should develop its own planning and performance system for the rebate program and the overall water conservation effort that will benefit the City now and in the future.

**OBJECTIVE 2: Determine if the City has taken appropriate steps to help ensure proper indemnification related to the plumbing and landscape conversion rebate programs.**

**Finding:** The Department has taken the appropriate steps to ensure City indemnification related to the Plumbing and Landscape Conversion rebate programs.

Criteria: Steps should be taken to minimize the City's risk in program operations and help ensure compliance with applicable laws and regulations.

City Administrative Regulation (AR) 120 relating to City publications and AR 180 relating to City symbol and seal usage requires all communications intended for public or employee-wide distribution to be reviewed by CAPA prior to distribution. CAPA staff reviews each project and/or proposal from a citywide perspective to ensure a consistent message and avoid duplication of effort. Communications include (but are not limited to) citywide newsletters and announcements, bulletins, publications, brochures, and video scripts.

The contract procurement process described in AR 215 requires the following procedures be followed for City general service contracts:

- Name a Contract Administrator.
- Be initiated through an Invitation for Bid or Request for Proposal.
- Have been reviewed and signed by the Legal, Risk, and Purchasing Departments.
- Contain a valid Insurance Certificate that complies with the contract terms and will be maintained through the contract term.

Condition: The Water Resources Department followed proper procedures in procuring an outside landscape contractor for the new LAP and ensuring that the rebate program publications complied with City policy. We reviewed contract files and interviewed Purchasing, Risk, and Water Conservation staff to confirm that all the required contract administration criteria were fulfilled.

Publication and City seal compliance was verified through interviews with CAPA staff. Based on the interview responses, CAPA has consistently reviewed current and past rebate publications. The LAP pamphlet and application are currently in their Office.

Effect: Compliance with criteria achieved.

Recommendation: None.

**OBJECTIVE 3: Determine if the funds designated for the rebate programs are used appropriately.**

<p><b>Finding:</b> Rebate expenditures recorded by the Water Conservation Division and Financial Services Department could not be reconciled.</p>
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Criteria: Program administration should include elements of cost control and monitoring of available budget. Sufficient oversight should be exercised over programs to help ensure that only appropriate expenditures are charged against them given the program's purpose and approved spending limits.

The Financial Services Department maintains control over the City accounting and financial reporting system to ensure data integrity and allow for financial information tracking.

Condition: We were not able to reconcile total expenditures recorded for the three rebate programs operating in FY 04/05 through September 2005. Discrepancies were found when tracing the monthly and year-to-date rebate totals recorded by the Program to the monthly and year-to-date totals recorded on the Detailed Trial Balance. Support documentation, provided by the Utility Billing Division as detail for the monthly expenditures, did not match either the Detail Trial Balance or the Program expenditure totals. According to a Water Resources Specialist, the totals have never matched. She identified timing as the reason for the discrepancies.

Cause: Expenditure reconciliation difficulties are the result of processing methods and the lack of report detail provided by Financial Services. Currently, each of the four Water Resources Specialists handles a rebate program. Each records the rebate activity on separate Excel spreadsheets. Differences occur when the rebates are issued. Plumbing, irrigation controller, and hot water recirculation system rebates are issued immediately, as long as all requirements are met, while the landscape rebates can take six months to one year to complete, depending on the customer. As activity continues, the rebated accounts are commingled between the landscape accounts still in process, which makes monthly reconciliation time consuming.

Copies of the rebate documentation are individually sent to the Utility Billing Division to record rebate credits on customer water accounts. Timing differences occur because Financial Services can record the rebate in a different accounting period than the Program. Utility Billing does return the rebate documentation to Water Conservation confirming that the credit was electronically recorded. However, the accounting period in which the credit was applied is not evident.

We found that even though the Financial Services Detailed Trial Balance reflected account activity by month, Utility Billing was unable to provide detail documentation to accurately support the expenditures recorded and reported on the Financial Services reports.

Effect: Program monthly and year-end totals for the plumbing, landscape, and irrigation controller rebates do not agree with the expenditures recorded by Financial Services. The possibility exists that credits could be issued to individuals who have not gone through the rebate eligibility process.

Recommendation: The Water Resources Department should re-evaluate the methods used to process rebate credits and track expenditures.

**Finding:** Funds budgeted for City water conservation efforts will be used to fund neighborhood revitalization efforts.

Criteria: The purpose of the Water Conservation Program is to conserve water through education, workshops, and literature.

Condition: Under current LAP guidelines, water conservation funds will be available to fund landscape improvements without demonstrating that the results will conserve water. Instead of using projected water savings as the means of determining qualification, LAP is based on income and failure to maintain a yard in compliance with existing Code requirements. Under current guidelines, the determination on which funding source will be used to cover the cost of landscaping will be based on location. Effectively, then, budget set aside for efforts to conserve water will actually be used in situations where the water consumption will increase as a result of installing plants in front and side yards of homes that have been left barren.

Cause: The CNR Department has conducted an ongoing effort to upgrade and cleanup mature neighborhoods. Homes of the elderly and disabled located in south Scottsdale have been earmarked for assistance. Funds available in the Water Resources Department were targeted to provide supplemental funding for revitalization efforts.

Effect: Shifting costs for a revitalization effort to the Water Resources Department obscures the amount the City is spending to subsidize code enforcement compliance. Moreover, because the water rates are set based on costs assigned to this Department, other water users will absorb the cost of the revitalization effort instead of having the program paid with General Fund monies.

Recommendation: Water Resources Department management should re-evaluate its goals, objectives, and outcomes to ensure that the funds designated for water conservation are used in the most efficient manner. Funds for these programs should only be used if there is a potential for a reduction in water usage and not for revitalization efforts more appropriately funded with general City revenues.

**OBJECTIVE 4: Determine program compliance with ADWR RCMs; City Code, Article VII, Section 49-241 through 49-264; and the recent rebate program expansions approved by City Council.**

<p><b>Finding:</b> Rebates issued by various programs within the City were not in compliance with City Code, Article VII, Section 49-241 through 49-264.</p>
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Criteria: City Code, Article VII, Section 49-243(c) 2, designates that plumbing rebates are available to single-family residences, multi-family, commercial, or industrial properties.

Condition: During our work, we found instances where plumbing rebate credits were issued to accounts assigned to three City properties. As a result, 52 percent (\$7,950 out of \$15,330) of the expenditures recorded in April 2005 and 42 percent (\$2,850 out of \$6,810) expended in November 2004 were not appropriate under the parameters set out in City Code.

Cause: The program is striving to comply with ADWR annual reporting requirements. Under ADWR RCM No. 8, the City agrees to rebate existing non-residential customers who elect to replace existing high water use plumbing fixtures. Language in City Code is in conflict with the parameters set in the Non-Per-Capita Agreement filed with ADWR.

Effect: Ordinances set the parameters that can be used by management to make decisions.

Recommendation: Water Resources staff should submit a modified provision to City Council for consideration or submit a revised RCM to ADWR for approval.

## APPENDIX A - MANAGEMENT RESPONSE

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### INTEROFFICE MEMORANDUM

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TO: CHERYL BARCALA, CITY AUDITOR  
FROM: DAVID MANSFIELD, GENERAL MANAGER, WATER RESOURCES  
DATE: 12/19/05  
SUBJ: AUDIT OF PLUMBING AND LANDSCAPE CONVERSION REBATES: REPORT NO. 0517 :  
MANAGEMENT RESPONSE

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On November 18, 2005, the Water Resources Department received the draft audit work paper regarding the findings of an internal audit of the Department's plumbing and landscape conversion rebate programs. As required the Department submits the attached Action Plan and Management Response for inclusion in the final report document.

We appreciate the challenge of reviewing the rebate program in isolation from the rest of the City's water conservation programs, especially since there so many interrelated components of the City of Scottsdale's overall integrated water conservation program. We concur with the Auditor's recommendations, and will implement the program improvements as identified in the attached Action Plan.

Further, it is important to clarify that Scottsdale's incentive rebate program and other related programs significantly surpass the minimum water conservation program requirements in compliance with ADWR. The following are implemented examples of the areas where this has occurred:

#### Rebates

##### Landscape Rebates

- Scottsdale program: Offer landscape rebate of up to \$3,000 for non-residential facilities and offer landscape rebate of up to \$1,500 for residential facilities.
- ADWR requirement: Offer landscape rebate of up to \$500 for non-residential facilities.



### Other Programs

#### Landscape Workshops

- Scottsdale program: In 2004, Scottsdale conducted twenty-two (22) landscape workshops attended by more than 650 residents.
- ADWR requirement: Scottsdale must offer eight (8) landscape workshops each calendar year.

#### Hot Water Recirculation

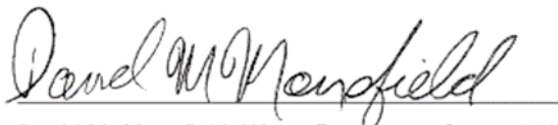
- Scottsdale program: Provide rebate for installation of water conserving hot water recirculation systems.
- ADWR requirement: NONE.

#### Public Outreach

- Scottsdale program: Provide customers with water conservation information continuously through City website and on-hold messages. Provide customers with water conservation information monthly through water bill messages. Provide customers with water conservation information regularly through participation in local events.
- ADWR requirement: Provide customers with water conservation information a minimum of one time per year through at least one medium.

#### Landscape Watering Advice

- Scottsdale program: Mail landscape watering advice information to all existing and new residential water customers AND make watering information available to customers at local distribution centers.
- ADWR requirement: Mail landscape watering advice information to all existing and new residential water customers OR make watering information available to customers at local distribution centers.



David M. Mansfield, Water Resources General Manager

## APPENDIX B - ADWR RECOMMENDED CONSERVATION MEASURES

### RESIDENTIAL INTERIOR SUBSTITUTE RCM

#### LOW FLOW PLUMBING REBATE FOR EXISTING RESIDENTIAL CUSTOMERS (SUBSTITUTE FOR: WATER AUDIT AND FIXTURE RETROFIT PROGRAM FOR EXISTING RESIDENTIAL CUSTOMERS)

##### Implementation Tasks:

1. The City shall offer a rebate to existing residential customers who elect to replace existing high water use toilets and showerheads with low-flow devices, consistent with the Arizona Water Efficient Plumbing Act.
2. A rebate of seventy-five dollars (\$75.00) shall be credited to the customer's water bill for each toilet replaced. A five dollar (\$5.00) rebate shall be credited to the customer's water bill for each showerhead replaced. Faucet aerators shall be offered with each rebate.
3. To be eligible for the rebate, customers shall meet the following criteria:
  - a) Type of device shall be equal to or less than a 1.6 gallons per flush toilet and a 2.75 gallons per minute showerhead.
  - b) A dated receipt shall be required with the application form.
  - c) Name, address, type of device, and other necessary information shall be filled out on an application form.
  - d) No more than two rebates for toilet replacement and two rebates for showerhead replacement shall be allowed per household.
4. The City shall continue to inform its residential customers, twice per year, through water bill inserts, water conservation flyers to new homeowners of existing homes, and at water conservation events about the availability of the low flow plumbing rebate program.

##### Annual Reporting and Program Evaluating Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall include for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Evaluation of program effectiveness by comparing the projected use of rebated fixtures at the use rate of the former fixtures
  - b) The number and type of rebates given, including the number of aerators given out.
  - c) Methods used for notifying customers of the availability of the rebate program.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

RESIDENTIAL INTERIOR STANDARD RCM-MODERATE

**ORDINANCE FOR WATER EFFICIENT PLUMBING FIXTURES IN NEW RESIDENTIAL HOUSING UNITS**

Implementation Tasks:

1. At all times while regulated under the Non-Per Capita Conservation Program, the City shall have in effect and enforce an ordinance prohibiting the installation of plumbing fixtures in new residential housing units and the replacement of plumbing fixtures in existing residential housing units unless the fixtures meet the water savings performance standards set forth below. The ordinance shall provide that the maximum flow rates of plumbing fixtures shall be equal to or less than the following:

- |   |                        |
|---|------------------------|
| • Faucets (kitchen and lavatory)              | 3.0 gallons per minute |
| • Replacement aerators (kitchen and lavatory) | 3.0 gallons per minute |
| • Toilets (water closets)                     | 1.6 gallons per flush  |
| • Showerheads                                 | 3.0 gallons per minute |

The ordinance shall also provide that evaporative cooling systems and decorative fountains shall be equipped with a water recycling or reuse system.

Permanent waivers from the ordinance may be granted for unusual circumstances (e.g., historic buildings or areas where sanitation or health code(s) may conflict). The City may comply with this conservation measure by keeping in effect and enforcing its existing Water Conservation Ordinance Sec. 49-80 and the Building Code Sec. 31-31. Implementation of this conservation measure shall include an inspection and enforcement program that ensures compliance with the ordinance.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall include for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program
    - 2) Estimated water savings.
  - b) Any amendments to the Water Conservation Ordinance Sec. 49-80 and the Building Code Sec. 31-31 which were adopted during the year.
  - c) The number of certificates of occupancy issued in the City's service area for single family and multi-family housing developments or the number of meters installed in new residential housing units.
  - d) The number of requests for variance and how they were dealt with and an explanation of why they were granted or denied.
  - e) The number of housing units inspected.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

RESIDENTIAL EXTERIOR STANDARD RCM-MODERATE

**EXTERIOR AUDIT PROGRAM FOR EXISTING RESIDENTIAL CUSTOMERS**

Implementation Tasks:

The City shall implement the following conservation measures:

1. The City shall notify all existing residential customers of the availability of an exterior water use self-audit packet. Notification shall occur at least on a quarterly basis through one or more of the following: monthly water bill inserts, the City Cable channel, public events, water conservation workshops, the conservation web site, and local publications. The City shall distribute a self-audit packet to all customers who request one. The self-audit packet shall include:
  - a) Irrigation system leak detection and efficiency information.
  - b) Irrigation scheduling information.
  - c) Evaporative cooler efficiency and leak detection information.
  - d) Water efficient landscaping or Xeriscape™ information.
  - e) Information on other ways to conserve water (i.e., Complete Guide to Home Water Management).
  - f) A survey card to be completed and returned by the customer.
2. A minimum of 2,759 single family and 2,234 multifamily housing units shall be audited by either the homeowner or a trained auditor, free of charge to the customer, by January, 2010. These numbers represent 5% of the total number of single family housing units (55,170) and 5% of the total number of multifamily housing units (44,669) in existence when the City is accepted into the Non-Per Capita Conservation Program, based on the Maricopa Association of Government's estimate of the number of housing units in City's service area as of July 1, 1999. The housing units audited to meet this requirement shall not include any housing units that were audited prior to acceptance into this program for the third management period unless the water use of the housing unit is inefficient. The completion of homeowner-performed audits must be confirmed in order to count towards the total number of audits required to be performed. Confirmation methods include a follow-up phone call, e-mail response, return of the survey card, or any other such method as mutually agreed upon between the City and the Department.
3. The City shall maintain a database to track the annual number of residential housing units for those audits that were returned or were conducted by staff and baseline data consisting of the monthly water consumption for the twelve (12) months immediately preceding the water audit.
4. A statistically significant sample of the audited customers (357) shall be surveyed to determine what measures were implemented following the initial audit and how well they worked. An analysis of the water consumption for twelve (12) months following the implementation of measures identified in the survey shall be tracked.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) Number of single family housing units audited and multi-family housing units audited (broken down into self-audits and City-performed audits, including the method used to confirm the homeowner-performed self-audits.
  - c) Description of the results of a follow-up survey done during the year of statistically significant sample as described in Implementation Task Number 4 above.
  - d) Copies of the individual follow up surveys upon request.
  - e) Methods used for notifying customers of the availability of the self-audit package.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

RESIDENTIAL EXTERIOR STANDARD RCM-MODERATE

**LANDSCAPE WATERING ADVICE PROGRAM FOR EXISTING AND NEW RESIDENTIAL CUSTOMERS**

Implementation Tasks:

The City shall implement the following conservation measures:

1. The City shall either: 1) mail a landscape watering advice information packet to all existing and new residential customers, or 2) make the packet available to customers at local distribution centers such as schools, libraries, plant nurseries or model homes and notify all residential customers of the location of the information.

The landscape watering advice information packet shall include:

- a) General benefits of efficient landscape watering including water and cost savings.
  - b) Flyers and brochures that illustrate the value of using evaporation prevention based irrigation scheduling.
  - c) Information on where guidelines concerning landscape watering can be found.
  - d) Information on the seasonal adjustment of irrigation timers.
2. The City shall hold efficient landscape irrigation and design workshops for existing and new residential customers at a minimum of eight per year for each year the City is regulated under the Non-Per Capita Conservation Program. The City shall advertise the workshops to all customers in the City's service area.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) Methods used to notify customers of the availability of the landscape watering advice information packet.
  - c) Number of packets distributed.
  - d) Number of workshops conducted and attendance at each workshop.
  - e) The method(s) used to notify the public of the availability of the workshop.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

RESIDENTIAL EXTERIOR STANDARD RCM-MODERATE

**ORDINANCE FOR MODEL HOMES IN NEW RESIDENTIAL DEVELOPMENTS**

Implementation Tasks:

The City shall continue to implement Ordinance Sec. 49-79.1, requiring model homes in residential subdivisions to meet water efficient standards. The City shall keep the ordinance in effect at all times while the City is regulated under the Non-Per Capita Conservation Program. The ordinance shall be administered through the combined efforts of the City's Development Services Department and Water Resources Division. The ordinance shall require:

- 1) That the amount of water intensive landscaped area within a model home lot shall not exceed an area calculated by adding ten (10) percent of the first nine thousand (9,000) square feet of the total lot area and five (5) percent of the remaining lot area, or two thousand two hundred and sixty-eight (2,268) square feet, whichever is less.
- 2) That the remaining area may be planted only with plants from the Phoenix Active Management Area Third Management Plan's Low Water Use Plant List, including any modifications to the list.
- 3) That water intensive landscaped area shall be located only in rear yards or play areas.
- 4) That all irrigation systems shall comply with the provisions of Ordinance Sec. 49-79.

The City shall provide new home buyers information on low water use landscaping and/or provide a low water use landscaping package that would include design advice and recommended plant material (only those plants listed on the Phoenix AMA Low Water Use Plant List). The new resident packet shall be mailed to each new customer within two weeks of establishing water service.

Implementation of this conservation measure shall include an inspection and enforcement program that ensures compliance with the ordinance. For purposes of this RCM, the term "water-intensive landscaped area" means an area of land that is watered with a permanent water application system and planted primarily with plants not listed in the Phoenix Active Management Area Third Management Plan Low Water Use Plant List, or any modifications to the list, and the total surface area of all water features (including swimming pools of any size, fountains, ponds, water courses, waterfalls, and other artificial water structures) filled or refilled with water from any source.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) A copy of the ordinance (first year only unless there is an amendment to the ordinance).
  - b) An Assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated Water Savings.
  - c) The estimated annual number and location of model homes built during the reporting year.
  - d) A list of any violations and an explanation of the enforcement actions.
  - e) A copy of the landscape information mailed to the new customers.
  - f) The number of new customers that were mailed the landscape information.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

RESIDENTIAL EXTERIOR SUBSTITUTE RCM – MODERATE

**SYSTEM-RELATED WATER AUDIT PROGRAM**

(SUBSTITUTE FOR: PROHIBIT THE CREATION OF NEW COVENANTS, CONDITIONS AND RESTRICTIONS WHICH REQUIRE THE USE OF WATER-INTENSIVE LANDSCAPING OR WHICH PROHIBIT THE USE OF LOW FLOW WATER USE LANDSCAPING IN NEW RESIDENTIAL DEVELOPMENTS)

Implementation Tasks:

The City shall continue to administer its existing distribution system water audit program. The following conservation measures shall be maintained as part of the administration of this program:

1. One full-time staff person to administer the distribution system water audit program.
2. A Meter Accuracy Program for all water customers which shall include at a minimum:
  - a) Monthly consumption comparisons of all meters in the City's system.
  - b) A meter replacement program.
3. A Water Distribution Leak Detection Program based on a 1993 system study, to replace deteriorating mains and service lines within the City's service area.
4. A database to monitor monthly water use, water production, and water sales to help identify problems with the utility billing system or water distribution system.
5. A monthly well production and well meter monitoring program to detect and replace malfunctioning meters.
6. A valve exercising and replacement program used to ensure proper valve functioning for emergency shutdowns and replacement sections of the City's distribution system.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) An annual identification of the number of customer meters under-reporting monthly water use and the number that were replaced by the City.
  - c) The annual number and estimated location of the distribution mains and service lines replaced or repaired.
  - d) A report of the month-by-month water production and water use in each calendar year.
  - e) A report of the number of service area well meters replaced in each calendar year.
2. The City shall provide any other reasonable information required by the director to evaluate the effectiveness of the implementation of the above referenced RCM.



RESIDENTIAL EXTERIOR STANDARD RCM-MODERATE

**CHOICE #2 OF 3—LIMIT TURF AND OTHER WATER-INTENSIVE LANDSCAPING IN COMMON AREAS OF NEW SINGLE FAMILY AND MULTI-FAMILY DEVELOPMENTS**

Implementation Tasks:

1. The City shall continue to enforce Ordinance Sec. 49-81 and Ordinance Sec. 49-79 limiting the water-intensive landscaped area within common areas of all new single family and multi-family developments and prohibiting the planting or watering of turf in all rights-of-way within new single and multi-family housing developments. The City shall keep the ordinance in effect at all times while regulated under the Non-Per Capita Conservation Program. The ordinance shall be administered through the combined efforts of the City's Development Services Department and Water Conservation Office. This ordinance shall require:
  - a) That the amount of water intensive landscaping in common areas of new single family and new multi-family developments not exceed an area calculated by adding ten (10) percent of the first nine thousand (9,000) square feet of the total lot area of the common area and five (5) percent of the remaining total lot area of the common area, excluding areas used for active recreational purposes.
  - b) That only plants from the Phoenix Active Management Area Third Management Plan's Low Water Use Plant List, including any modifications to the list, may be planted in the remaining total lot areas.
  - c) That all irrigation systems comply with Ordinance Sec. 49-81.
2. The following shall be implemented to verify that the new single family and multi-family developments built during the reporting year meet the requirements of the ordinance:
  - a) The development shall pass all applicable final inspections, which includes verification that landscape matches the approved landscape design plan.
  - b) No "Letter of Approval" shall be issued by the City for a development which fails to pass all applicable final inspections.
3. For purposes of this RCM:
  - a) The term "water-intensive landscaped area" means an area of land that is watered with a permanent water application system and planted primarily with plants not listed in the Phoenix Active Management Area's Third Management Plan Low Water Use Plant List, or any modifications to the list, and the total surface area of all bodies of water filled or refilled with water from any source, including effluent, that are an integral part of the landscaped area. Bodies of water used primarily for swimming purposes are not an integral part of a landscaped area.
  - b) The term "active recreational area" means an area designated and primarily used for organized sports such as softball, baseball, football, soccer or a similar related sport.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) Estimated or confirmed acreage of common areas within each new single-family and new multi-family development and the area (square feet or acres) of water-intensive landscaping in each common area.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.



NON-RESIDENTIAL INTERIOR SUBSTITUTE RCM

**LOW FLOW PLUMBING REBATE PROGRAM  
FOR EXISTING FACILITIES**  
(SUBSTITUTE FOR: INTERIOR AUDIT PROGRAM FOR EXISTING FACILITIES)

Implementation Task:

1. The City shall offer a rebate to existing non-residential customers who elect to retrofit existing high water use plumbing fixtures to low water using fixtures, consistent with the Arizona Water Efficient Plumbing Act.
2. A rebate of seventy-five dollars (\$75.00) shall be credited to the customer's water bill for each toilet replaced. A five dollar (\$5.00) rebate shall be credited to the customer's water bill for each showerhead replaced. Faucet aerators shall be offered with each rebate.
3. To be eligible for the rebate, customers shall meet the following criteria:
  - a) Type of device shall be equal to or less than a 1.6 gallons per flush toilet and a 2.75 gallons per minute showerhead.
  - b) A dated receipt shall be required with the rebate application form.
  - c) Name, address, type of device, and other necessary information shall be filled out on an application form.
4. The City shall continue to inform its non-residential customers, twice per year, through water bill inserts, water conservation flyers and at water conservation events about the availability of the low flow plumbing rebate program.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall also include for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program
    - 2) Estimated water savings.
  - b) The number and type of rebates given, including the number of aerators given out.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

NON-RESIDENTIAL INTERIOR STANDARD RCM

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**ORDINANCE FOR WATER EFFICIENT PLUMBING FIXTURES IN NEW NON-RESIDENTIAL FACILITIES**

Implementation Tasks:

1. At all times while regulated under the Non-Per Capita Conservation Program, the City shall have in effect and enforce an ordinance prohibiting the installation of plumbing fixtures in new non-residential facilities and the replacement of plumbing fixtures in existing non-residential facilities unless the fixtures meet the water savings performance standards set forth below. The maximum flow rates of plumbing fixtures shall be equal to or less than the following:

• Faucets (kitchen and lavatory)	3.0 gallons per minute
• Automatic faucets	25 gallons per delivery
• Replacement aerators (kitchen and lavatory)	3.0 gallons per minute
• Toilets (water closets)	1.6 gallons per flush
• Showerheads	3.0 gallons per minute
• Urinals	1.0 gallons per flush

The ordinance shall also provide that evaporative cooling systems and decorative fountains shall be equipped with a water recycling or reuse system.

Permanent waivers from the ordinance may be granted for unusual circumstances (e.g., hospitals and other areas where sanitation or health code(s) may conflict). The City may comply with this conservation measure by keeping in effect and enforcing its existing Water Conservation Ordinance Sec. 49-80 and the Building Code Sec. 31-31. Implementation of this conservation measure shall include an inspection and enforcement program that ensures compliance with the ordinance.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall include for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) Any amendments to the Conservation Ordinance Sec. 49-80 and the Building Code Sec. 31-31 described above which were adopted during the year.
  - c) The number of certificates of occupancy issued in the City's service area to non-residential customers or the number of meters installed in non-residential facilities.
  - d) The number of requests for variance, how they were dealt with and an explanation of why they were granted or denied.
  - e) The number of non-residential facilities inspected.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

NON-RESIDENTIAL INTERIOR STANDARD RCM

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**DISTRIBUTION OF CONSERVATION INFORMATION TO ALL NEW NON-RESIDENTIAL CUSTOMERS AND SUBMITTAL OF A WATER USE PLAN BY NEW LARGE FACILITIES**

Implementation Tasks:

1. The City shall continue to enforce Ordinance Sec. 49-82 requiring new non-residential customers who have the potential to use 10 acre-feet or more of water per year (excluding turf-related facilities and large-scale cooling facilities) to submit a water use plan as described below for their facilities as a condition of new service. The water use plan shall identify all water uses anticipated by the user and the water conservation measures to be utilized. The water use plan shall address at least the following (where applicable):
  - a) Whether alternative water sources will be used (for example, CAP water, effluent, poor quality groundwater or other non-groundwater sources).
  - b) Operating levels of Total Dissolved Solids (TDS) or conductivity for cooling towers and proposed total cooling capacity.
  - c) Whether the user will use the best available conservation technologies in accordance with existing process uses (e.g., recirculating systems for process water, alternative dust control methods, and automatic shutdown devices to eliminate continual running water).
  - d) Any plans for the reuse of wastewater or process water at the facility.
  - e) A description of any available water conservation training programs offered to employees.
  - f) Type of landscaping and irrigation system.
2. All new non-residential customers shall receive a conservation packet. Additionally, after identifying the non-residential customers who will potentially use 10 acre-feet or more per year (through the water use report submitted to the City prior to development), the City shall distribute AMWUA's "Facilities Manager's Guide to Water Management" to each of these customers. Where appropriate, the City shall make recommendations to the customers for efficient use of water. The conservation packet shall include:
  - a) General benefits of efficient landscape watering including water and cost savings.
  - b) Flyers and brochures that illustrate the value of using evaporation prevention based irrigation scheduling.
  - c) Information on where guidelines concerning landscape watering can be found.
  - d) Information on the seasonal adjustment of irrigation timers.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program
    - 2) Estimated water savings.
  - b) A copy of amended Ordinance Sec. 49-82 (first year only unless there are additional amendments to the ordinance in future years).
  - c) The number of "Facility Manager's Guide to Water Management" distributed.
  - d) The number of water use plans received from new non-residential customers.
  - e) Copies of the completed water use plans (upon request).
  - f) The number of packets distributed.
  - g) A copy of the packet.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

NON-RESIDENTIAL EXTERIOR SUBSTITUTE RCM

**REBATE PROGRAM FOR LOW WATER USE LANDSCAPING AND IRRIGATION SYSTEM  
IMPROVEMENTS FOR EXISTING OR NEW FACILITIES**  
(SUBSTITUTE FOR: EXTERIOR AUDIT PROGRAM FOR EXISTING NON-RESIDENTIAL CUSTOMERS)

Implementation Tasks:

1. The City shall offer a landscape rebate of up to five hundred dollars (\$500) per landscape meter to existing and new non-residential customers per Ordinance Sec. 49-52(c) and Ordinance Sec. 49-52(e).
2. To be eligible for the rebate, customers shall meet the following criteria:
  - a) Supply name and address at which service is received.
  - b) Completion and installation of an approved landscape plan.
  - c) Approximately seventy-five (75) percent of the vegetative landscaping must consist of low water use plants from the Phoenix AMA Low Water Use Plant List. The remaining twenty-five (25) percent may consist of any type of plant material including turf.
3. For purposes of this RCM, the term "landscapable area" has the same meaning as defined in Ordinance Sec. 49-52(c)(9).
4. The City shall also offer a rebate of fifty dollars (\$50) for the installation of a new electronically activated automatic irrigation control device installed after January 1, 2001.
5. At a minimum, notification shall be done through one or more of the following: monthly water bill inserts, the City's "on hold" message, the City Cable channel, public events, water conservation workshops, the City web page, and local publications.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program.
    - 2) Estimated water savings.
  - b) The method used for notifying customers of the availability of the landscape and controller rebate program.
  - c) The number of applications received.
  - d) The number of applications accepted.
  - e) Copies of the completed rebate application forms shall be furnished upon request.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.

NON-RESIDENTIAL - EXTERIOR STANDARD RCM

**LANDSCAPE ORDINANCE FOR NEW NON-RESIDENTIAL FACILITIES**

Implementation Tasks:

1. The City shall continue to enforce Ordinance Sec. 49-78, limiting the water-intensive landscaped area within the landscapable area of new non-residential customers in the manner below. The ordinance shall not apply to non-residential customers regulated as turf-related facilities under the Third Management Plan or new non-residential customers with less than 10,000 square feet of landscapable area. The City shall keep the ordinance in effect at all times while regulated under the Non-Per Capita Conservation Program.
  - a) New schools shall limit the amount of water-intensive landscaping to fifteen (15) percent of the total lot area of the school. Active recreational areas shall not be considered as part of the total lot area of the school and shall not be considered in determining compliance with this restriction.
  - b) New churches shall limit the amount of water-intensive landscaping to twenty-five (25) percent of the total lot area of the church.
  - c) New resorts, including hotels and motels, shall limit the total amount of water-intensive landscaping to an area calculated by adding ten (10) percent of the first nine thousand (9,000) square feet of the total lot area of the resort and eight and one half (8 - 1/2) percent of the remaining total lot area of the resort. For the purposes of this paragraph, landscaping regulated as a turf-related facility, shall not be included in the calculation of water-intensive landscaping or the total lot area of the resort.
  - e) All new non-residential, commercial and industrial facilities shall limit the amount of water-intensive landscaping to an area calculated by adding ten (10) percent of the first nine thousand (9,000) square feet of the total lot area of the facility and five (5) percent of the remaining total lot area of the facility.
  - f) Only plants listed on the Phoenix Active Management Area Third Management Plan's Low Water Use Plant List, including any modifications to the list, may be planted in all remaining areas.
  - g) All irrigation systems shall comply with Ordinance Sec. 49-81.
  - h) The use of water features and/or fountains shall be limited.
  - i) For the purpose of this section, acres within active recreational areas shall not be considered as part of the total lot acreage.
2. For purposes of this RCM:
  - a) The term "water-intensive landscaped area" means an area of land that is watered with a permanent water application system and planted primarily with plants not listed in the Phoenix Active Management Area Third Management Plan's Low Water Use Plant List, or any modifications to the list, and the total surface area of all bodies of water filled or refilled with water from any source, including effluent, that are an integral part of the landscaped area. Bodies of water used primarily for swimming purposes are not an integral part of a landscaped area.
  - b) The term "active recreational area" means an area designated and primarily used for organized sports such as softball, baseball, football, soccer or a similar sport.

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall contain the following information for the preceding calendar year:
  - a) An assessment of program effectiveness which shall include:
    - 1) Cost of implementing the program
    - 2) Estimated water savings
  - b) A copy of the ordinance (first year only unless there is an amendment to the ordinance)
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM.



EDUCATION STANDARD RCM

**PUBLIC INFORMATION AND EDUCATION REASONABLE CONSERVATION MEASURE**

Implementation Tasks:

1. A minimum of once a year, the City shall provide all customers with information on the following:
  - a) The significance and relevance of water conservation and methods of conserving water, including information about conservation devices and behavioral changes that save water.
  - b) How to participate in other conservation programs offered by the City under the Non-Per Capita Conservation Program.

At a minimum, notification shall be done through one or more of the following: monthly water bill inserts, the City's "on hold" message, the City Cable channel, public events, water conservation workshops, the City web page, and local publications

2. The City shall continue to distribute, with every water bill, conservation billing in either graphical or numerical format (i.e., graphs or numbers) showing current water use, the amount of water used during the preceding billing period and the same billing period for the previous year (as described in the City's application for the Non-Per Capita Conservation Program)

Annual Reporting and Program Evaluation Requirements:

1. An annual report shall be submitted to the Department on or before March 31 of each year. The annual report shall include for the preceding calendar year:
  - a) An assessment of program effectiveness which will include:
    - 1) Cost of implementing the program.
    - 2) Estimated Water Savings
  - b) Examples of any new materials distributed
  - c) A report on the methods used to notify customers of the information described in Implementation Task # 1.
  - d) The number of materials of each type distributed
  - e) The number of workshops conducted and the number of participants
  - f) Examples of monthly conservation billing materials.
2. The City shall provide any other reasonable information requested in writing by the director to evaluate the effectiveness of the implementation of this RCM